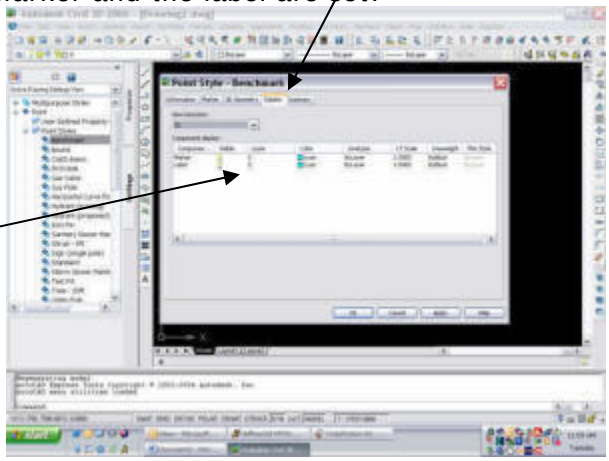
Using Styles in Civil 3D to manage points

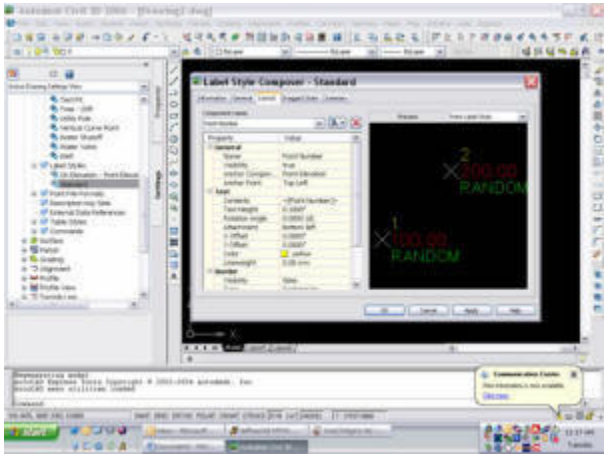
By using the Styles tools in AutoCAD® Civil 3D 2011, it is easy for users to manage the visibility, appearance, and workability for their points. Civil 3D recognizes the need to have some points appear in drawings while other points are invisible. And for the points that do appear, there are now more options for controlling their appearance. Here are a few tips for working with Point Styles and Point Label Styles.

The Basics

A Point Style manages three main visual components: the marker for the point, the visibility of that marker, and the visibility of the label. Here is an example of the Display tab of the Point Style Manager where the visibility of the marker and the label are set:



If the Point Style label visibility is set to "on" (light bulb icon is on), Civil 3D then uses the Point Label Style to manage the appearance, position, color, text size, and text style of the various components of the label, including Point Number, Elevation, Coordinates, and Description. Here is an example of a Point Label Style shown with a preview pane in the Point Label Style Composer:



From the Component Name pulldown menu, each component is managed separately to give the user a wide variety of options. For example, if the user desires to show only the elevation for a particular point or point group, a label style can be built with

the visibility for the elevation set to “true” and the visibility for all other components set to “false.”

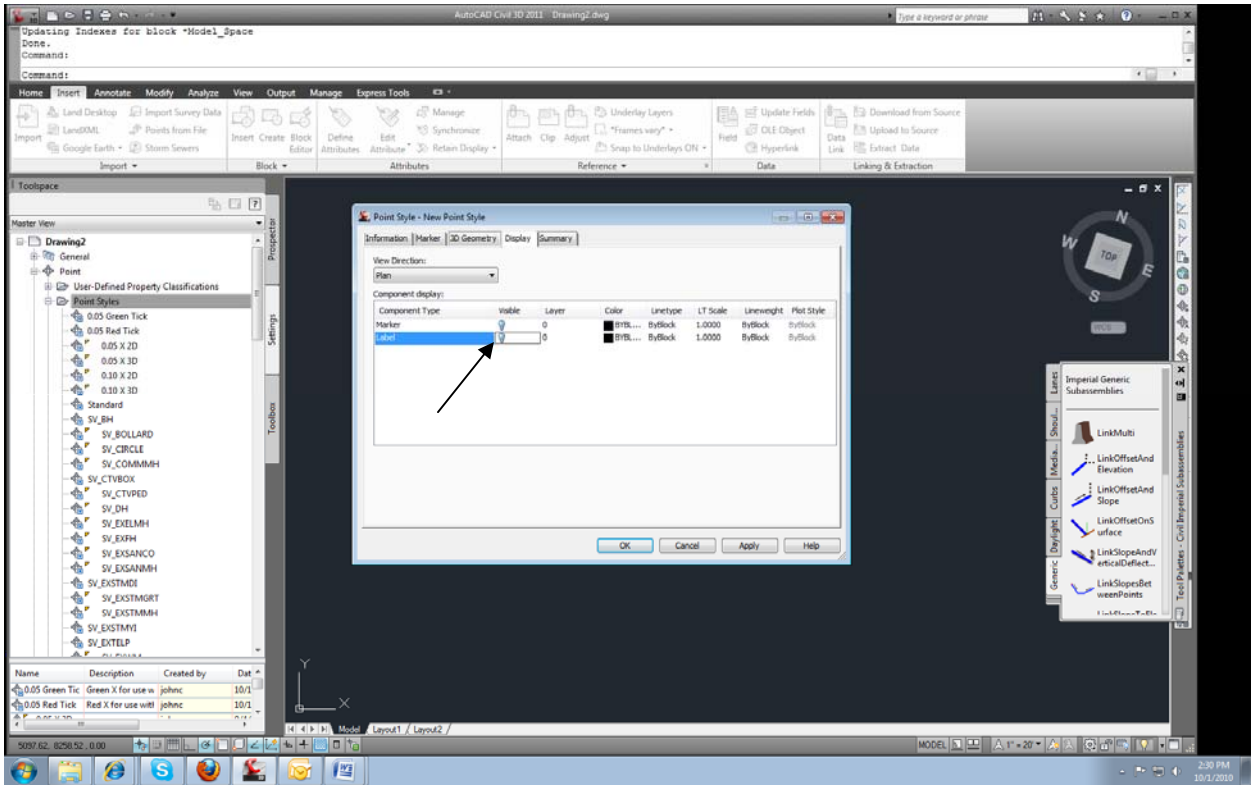
Working with Points

Engineers and designers will agree that most points do not need to appear on most plan sets, and that visible points are helpful primarily when building a base map in model space - connecting curb points, edge-of-pavement points, centerline points, etc. The rare point that may need to appear on a set of plans could be a survey control point, a property corner, a centerline-centerline intersection on a road, or a proposed bottom of curb point in a parking lot - showing just an elevation. Civil 3D has an easy way to manage all these needs using Point Styles and Point Label Styles. The procedure is as follows.

First, create some Point Label Styles – one for each desired appearance of a point label. I suggest at least two different types of Point Label Styles, one for normal appearance and one showing just elevation. The normal appearance will be used for points that are shown during base map creation (playing connect-the-dots). The elevation-only points are used for proposed points on a site plan that needs to show high points and low points along a curb line, for example. Another example of a Point Label Style that may be necessary is a label style used exclusively for survey control points that shows northing, easting, elevation, and the full description.

As for Point Styles, users should employ a different one for each established Point Group so that the markers for different kinds of points can be unique. For example, a power pole point may need to have a different appearance than a guy wire point. In Civil 3D, the symbols used to represent these different kinds of points are, in fact, the markers for the points. This is different from Land Desktop, in which separate blocks are imported as markers in addition to the points themselves.

As well as the Point Styles for each Point Group, I suggest creating a Point Style called "Invisible" or "Hidden." This style will be applied to two kinds of point groups: point groups that will never need to be seen and the specific group "_All Points" (more on this below). An example of a point group that will not need to be seen is "Natural Feature" (natural ground/feature shots that do not describe a particular land feature). "Natural Feature" will certainly be used to develop an existing ground surface, but once contours are generated, these points become an afterthought. Here is an example of what the "Hidden" Point Style will look like:

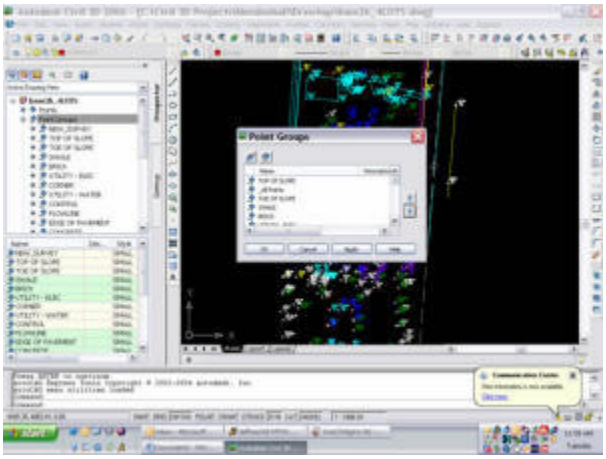


Notice that the light bulb icon for both the Marker and the Label are turned off. Applying this Point Style to a point group is the easiest way for a user to hide that collection of points.

Promotion of Groups

Civil 3D maintains a specific hierarchy when applying styles to point groups. If a point belongs to two different point groups, it takes the Point Style and Point Label Style from the group it belongs to that is higher in the pecking order. This is an important concept when considering that all points belong to a group called "_All Points". "_All Points" is created automatically by Civil 3D whenever points are created or imported into a drawing.

Here is a screen shot showing the hierarchy of point groups in an example drawing. This dialog box is accessed from the **Prospector tab > right-click Point Groups > Properties.**



The order of the groups is set by highlighting a group, then using the up and down arrows on the right side of the dialog box to promote or demote a group. In the above example, "_All Points" is second in the hierarchy.

I suggest applying the Point Style called "Hidden" to the group "_All Points" and promoting that group to the top of the list. In effect, this will hide all points in the drawing.

Then, as needed for either base map creation or to show points permanently, promote a group above "_All Points" to see those points. This enables the user to "isolate" a group of points and makes it easy to play connect-the-dots. Once the line work is completed, that group can be demoted below "_All Points" to hide the points again. Point groups that need to show up in a drawing can be moved above "_All Points" prior to printing.

There are countless possibilities in using styles and label styles for all objects in Civil 3D.

Users should develop their own methods and styles for working in their unique environment, and Civil 3D makes it easy to do just that.